

CLAIMS

What is claimed is:

1. A method comprising:

encoding a plurality of features of a label with a private key to
provide a medium certificate;

decoding the medium certificate with a public key; and

verifying the decoded medium certificate against the plurality of
label features to determine whether the label is genuine.
2. A method as recited by claim 1, wherein the plurality of label features
comprise coordinates of a plurality of optical fiber strands present on the label.
3. A method as recited by claim 1, wherein the medium certificate is provided
with the label.
4. A method as recited by claim 1, wherein the medium certificate is provided
with the label and the medium certificate is represented as one or more items
selected from a group comprising a bar code and an RFID.
5. A method as recited by claim 1, wherein the medium certificate is provided
remotely.

6. A method as recited by claim 1, wherein the medium certificate is provided remotely through data stored in a database.

7. A method as recited by claim 1, wherein the verifying comprises:

obtaining at least two shots of the label;

extracting data from the label shots;

determining a motion transformation function of the extracted data;

and

forming a multi-dimensional map of the plurality of label features.

8. A method as recited by claim 7, wherein the multi-dimensional map of the plurality of label features has a dimension selected from a group comprising about two, three, and four.

9. A method as recited by claim 7, wherein the extracted data comprises data selected from a group comprising guide pattern coordinates and lit fiber end coordinates.

10. A method as recited by claim 7, wherein the multi-dimensional map of the plurality of label features is compressed.

11. A method as recited by claim 1, wherein data regarding the plurality of label features is compressed prior to the encoding.
12. A method as recited by claim 1, wherein the plurality of label features comprise one or more features selected from a group comprising optical fiber length, optical fiber curvature, optical fiber relative light intensity, optical fiber florescence, optical fiber color, and optical fiber thickness.
13. A method as recited by claim 1, further comprising binding an application certificate to the medium certificate.
14. A method as recited by claim 1, further comprising binding an application certificate to the medium certificate, wherein the application certificate comprises application data.
15. A method as recited by claim 1, further comprising binding an application certificate to the medium certificate, wherein the application certificate is provided by using a private key.
16. A method as recited by claim 1, further comprising:

binding an application certificate to the medium certificate; and

verifying that the application certificate corresponds to the medium certificate to determine if the label is genuine.

17. A method as recited by claim 16, wherein the verification of the application certificate is performed by using a public key.

18. One or more computer readable media storing computer executable instructions that, when executed, perform the method as recited in claim 1.

19. A method comprising:

encoding a plurality of features of a label to provide a medium certificate;

providing an identifying indicia corresponding to the medium certificate; and

verifying the identifying indicia against the plurality of features of the label to determine whether the label is genuine.

20. A method as recited by claim 19, wherein the plurality of label features comprise coordinates of a plurality of optical fiber strands present on the label.

21. A method as recited by claim 19, wherein the medium certificate is provided by using a private key.

22. A method as recited by claim 19, wherein the verifying is performed by using a public key.

23. A method as recited by claim 19, wherein the identifying indicia is provided with the label.

24. A method as recited by claim 19, wherein the plurality of label features comprise one or more features selected from a group comprising optical fiber length, optical fiber curvature, optical fiber relative light intensity, optical fiber florescence, optical fiber color, and optical fiber thickness.

25. A method as recited by claim 19, wherein the identifying indicia is provided with the label and the identifying indicia is one or more items selected from a group comprising a bar code and an RFID.

26. A method as recited by claim 19, wherein the identifying indicia is provided remotely.

27. A method as recited by claim 19, wherein the identifying indicia is provided remotely through data stored in a database.

28. A method as recited by claim 19, wherein the verifying comprises:
- obtaining at least two shots of the label;
 - extracting data from the label shots;
 - determining a motion transformation function of the extracted data;
- and
- forming a multi-dimensional map of the plurality of label features.
29. A method as recited by claim 28, wherein the multi-dimensional map of the plurality of label features has a dimension selected from a group comprising about two, three, and four.
30. A method as recited by claim 28, wherein the extracted data comprises data selected from a group comprising guide pattern coordinates and lit fiber end coordinates.
31. A method as recited by claim 28, wherein the multi-dimensional map of the plurality of label features is compressed.
32. A method as recited by claim 19, wherein data regarding the plurality of label features is compressed prior to the encoding.

33. A method as recited by claim 19, further comprising binding an application certificate to the medium certificate.

34. A method as recited by claim 19, further comprising binding an application certificate to the medium certificate, wherein the application certificate comprises application data.

35. A method as recited by claim 19, further comprising binding an application certificate to the medium certificate, wherein the application certificate is provided by using a private key.

36. A method as recited by claim 19, further comprising binding an application certificate to the medium certificate, wherein the application certificate is provided by a hash value of the medium certificate.

37. A method as recited by claim 19, further comprising binding an application certificate to the medium certificate, wherein the application certificate is provided by appends a hash value of the medium certificate to application data to form extended application data.

38. A method as recited by claim 19, further comprising:

binding an application certificate to the medium certificate; and

verifying that the application certificate corresponds to the medium certificate to determine if the label is genuine.

39. A method as recited by claim 38, wherein the verification of the application certificate is performed by using a public key.

40. One or more computer readable media storing computer executable instructions that, when executed, perform the method as recited in claim 19.

41. A system comprising:

a processor;

a system memory coupled to the processor;

a medium scanner operatively coupled to the processor to scan a plurality of features of a label;

a label encoder to encode the plurality of label features as a medium certificate; and

a label printer to print the medium certificate on the label.

42. A system as recited by claim 41, wherein data regarding the scanned plurality of label features is compressed prior to encoding.

43. A system as recited by claim 41, wherein the label printer further prints an application certificate on the label.

44. A system as recited by claim 41, wherein the plurality of label features comprise coordinates of a plurality of optical fiber strands present on the label.

45. A system as recited by claim 41, wherein the plurality of label features comprise one or more features selected from a group comprising optical fiber length, optical fiber curvature, optical fiber relative light intensity, optical fiber florescence, optical fiber color, and optical fiber thickness.

46. A system as recited by claim 41, further comprising a label scanner to verify the medium certificate against the plurality of label features.

47. A system as recited by claim 41, further comprising an application label encoder to encode application data bound to the medium certificate as an application certificate.

48. A system as recited by claim 41, further comprising a verification system comprising:

a label scanner to scan the medium certificate off of the label; and

a verification medium scanner to scan the plurality of label features,

wherein if the medium certificate is decoded using a public key and the decoded medium certificate matches the scanned plurality of the label features by the verification medium scanner, the label is declared as genuine.

49. A system as recited by claim 48, wherein the matching is determined based on a threshold value.

50. A system as recited by claim 41, further comprising a verification system comprising:

a label scanner to scan the medium certificate off of the label; and
a verification medium scanner to scan the plurality of label features,
wherein if the medium certificate is decoded using a public key and the decoded medium certificate does not match the scanned plurality of the label features by the verification medium scanner, the label is declared as counterfeit.

51. A system as recited by claim 50, wherein the matching is determined based on a threshold value.